

Economics II

Aggregate Demand and Aggregate Supply Part 2



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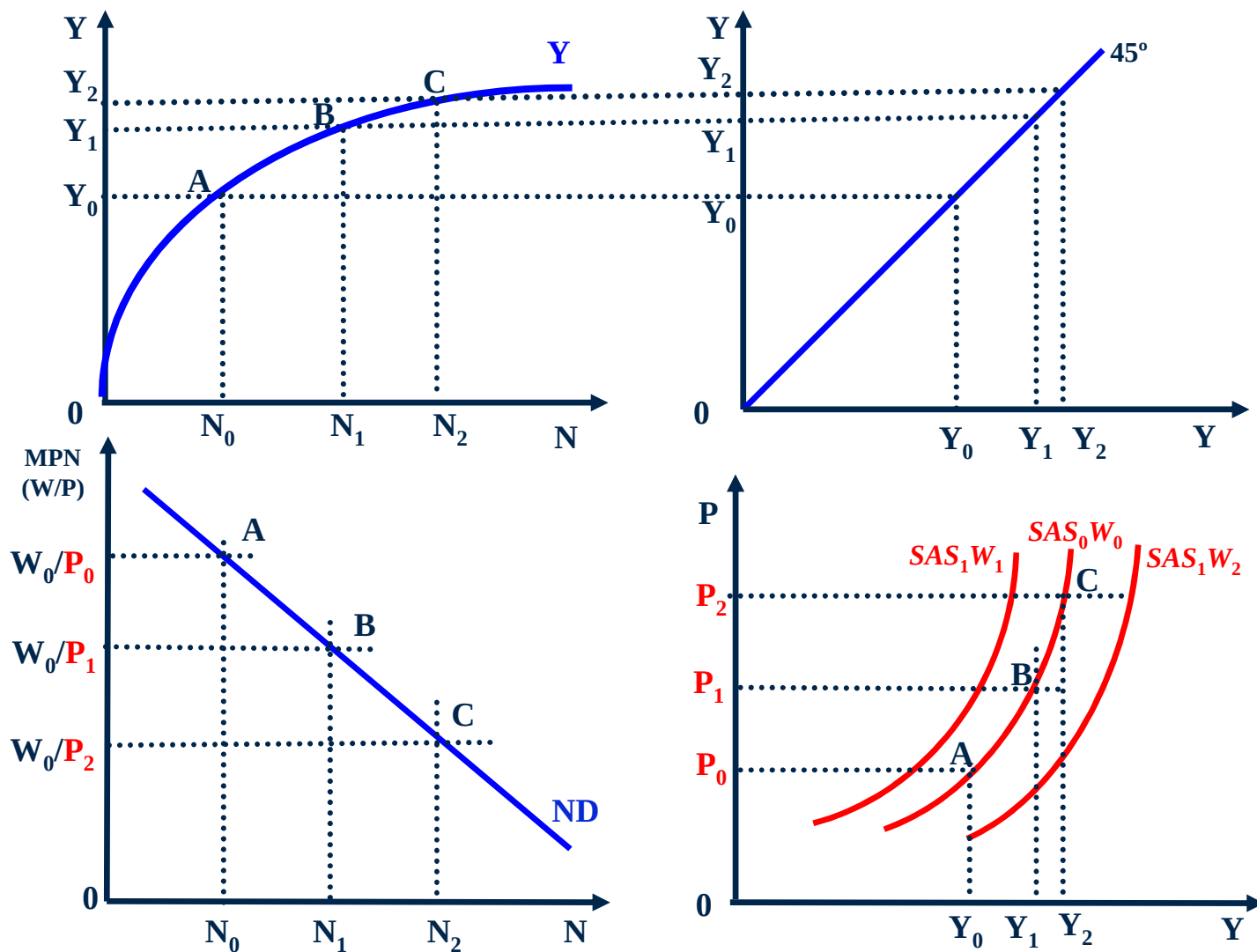
Effects of fiscal and monetary policies assuming various types of SAS curve

The aim of the lecture is to explain the effects of fiscal and monetary policy assuming various types of short-term aggregate supply curve, and thus to provide students with prerequisites for understanding the economic causes of macroeconomic fluctuations, inflation and unemployment.

Content:

- ❖ Introduction
- ❖ Keynesian SAS curve and fixed nominal wages – derivation
- ❖ New Classical macroeconomics
- ❖ Microeconomic basis and concept of classical SAS curve
- ❖ Conclusion – summary, list of tasks for students

a) Keynesian SAS curve – the derivation



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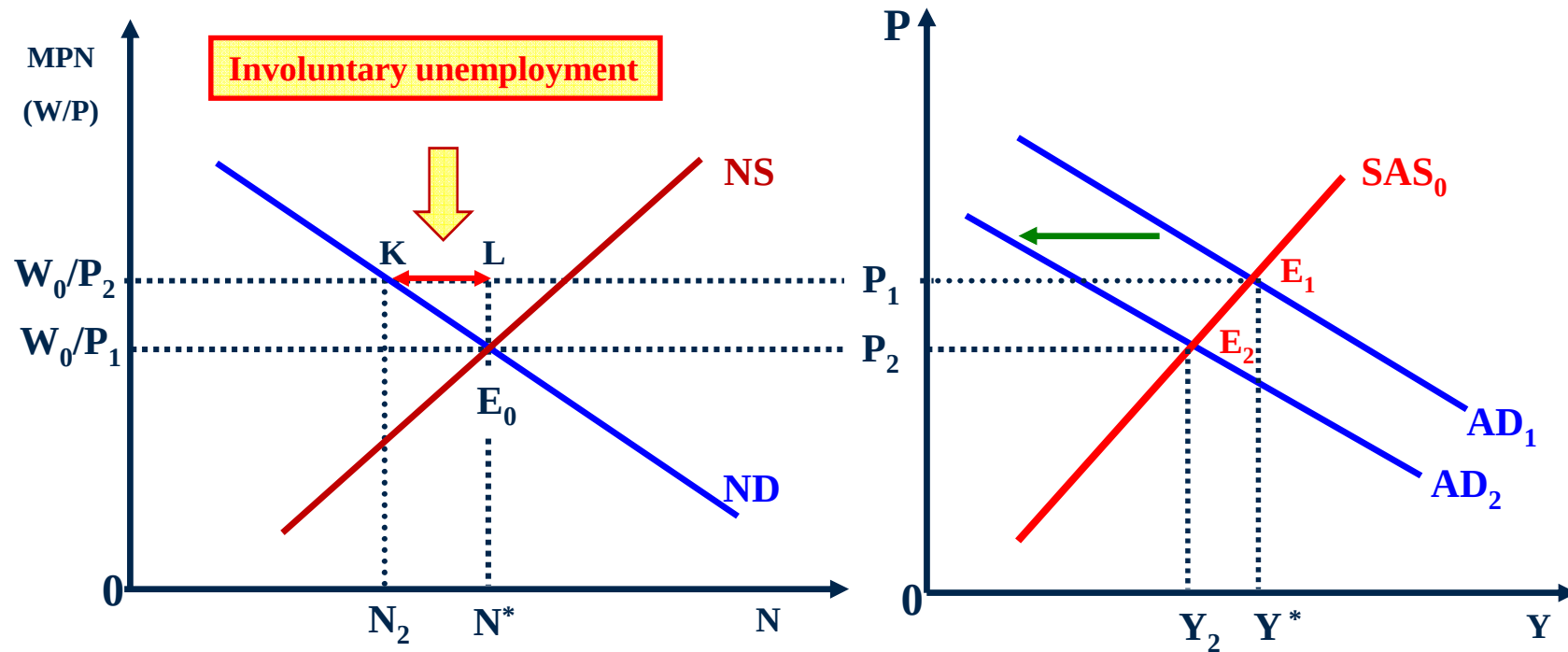
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❖ *Original Keynesian concept – inflexible (rigid) nominal wages and unemployment*

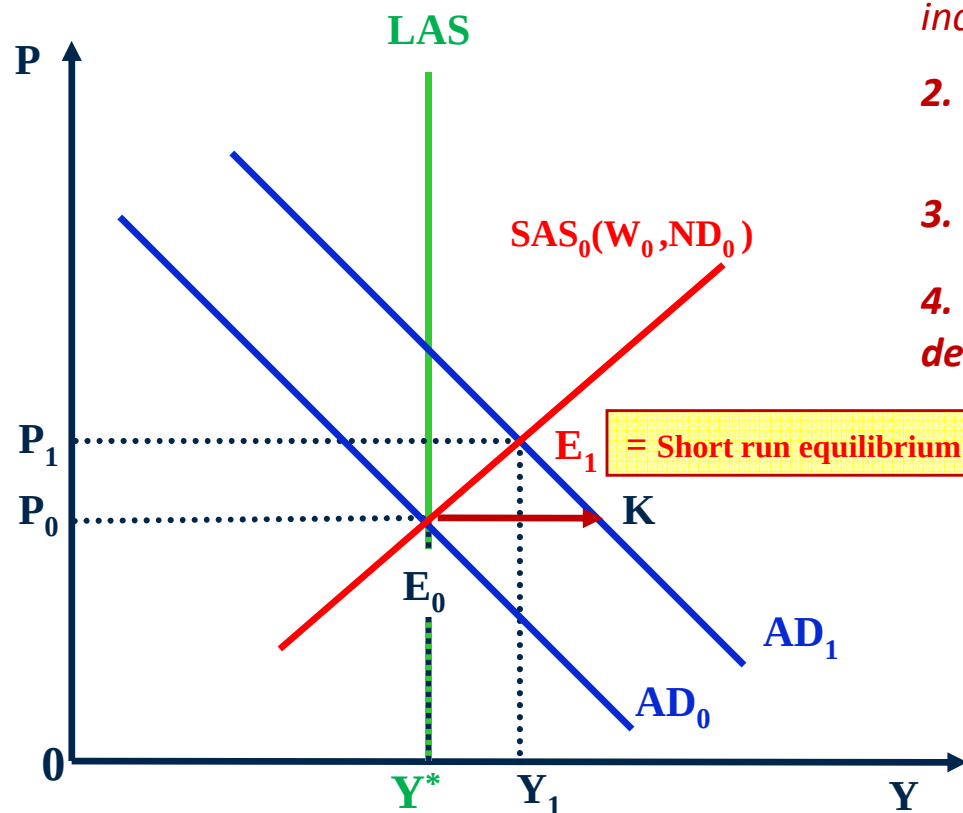
When the price level is increasing, real wages will fall and the aggregate demand for labor will increase and the production will increase, and vice versa.

The cause of involuntary unemployment is market imperfections hindering the nominal and real wage to set the equilibrium at the labor markets.



b) Fiscal policy – short and long run effects

❖ Short run effects of the fiscal expansion policy



1. The production and price level will increase.

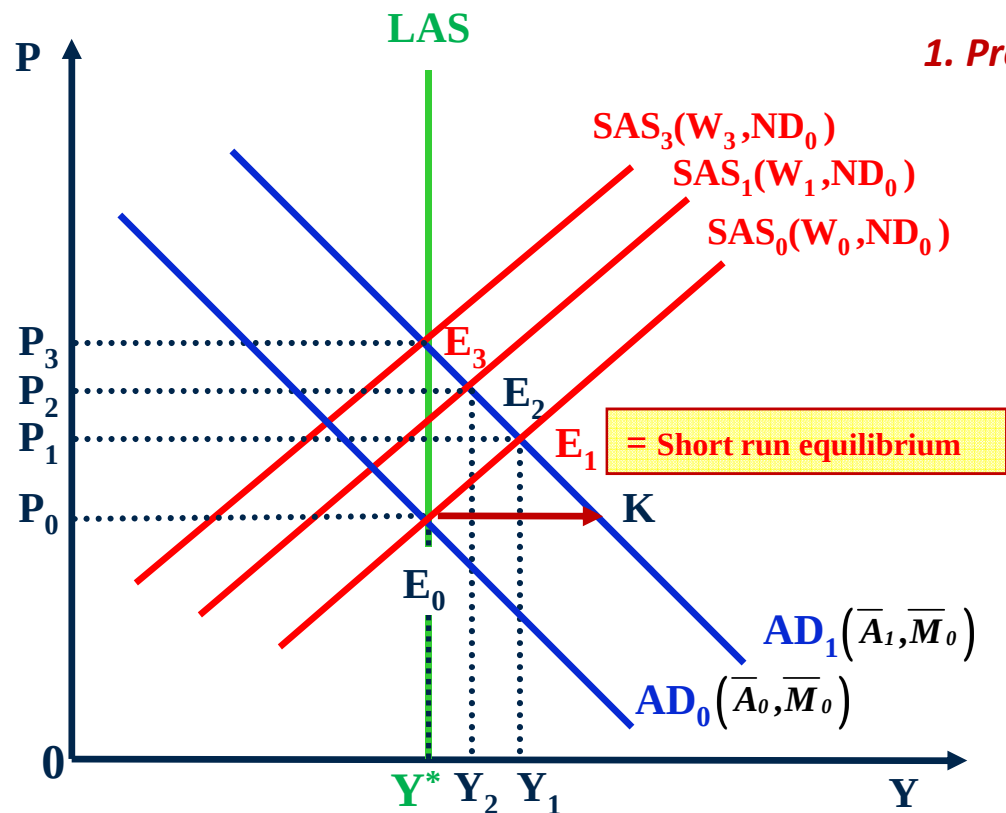
2. The interest rate will increase.

3. Real wages will be reduced.

4. Marginal productivity of labor will decrease.

b) Fiscal policy – short and long run effects

❖ Long run effects of fiscal expansion policy (point E_3)



1. Production and employment will not change;

2. Price level will increase;

3. Interest rate will increase;

4. Full crowding out effect.

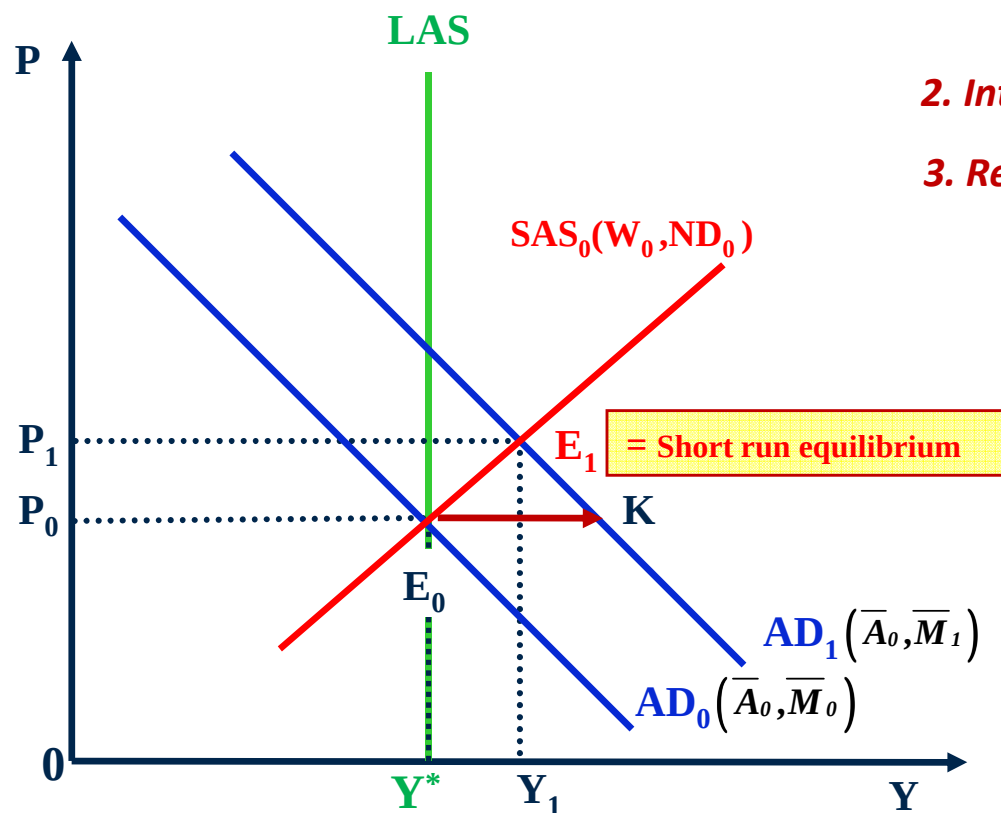
c) Monetary policy – short and long run effects

❖ *Short run effects of monetary expansion policy*

1. Production and price level will increase;

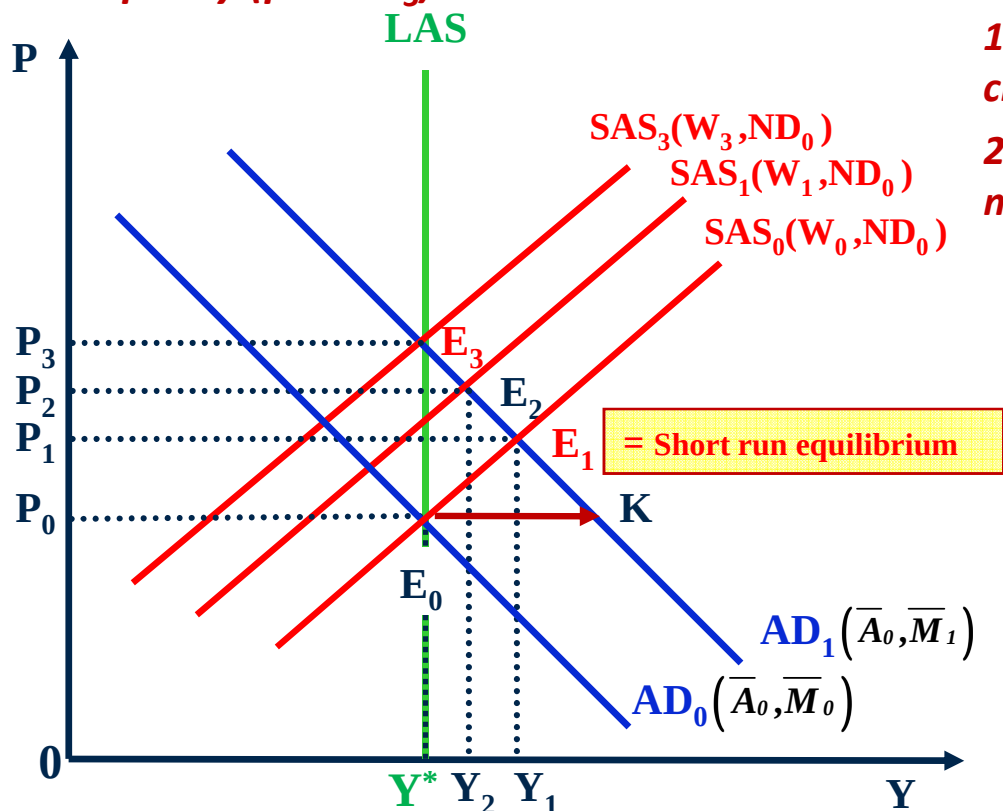
2. Interest rate will fall;

3. Real wages will be reduced;



c) Monetary policy – short and long run effects

❖ Long run effects of monetary expansion policy (point E_3)



1. Production and employment will not change;
2. Price level will increase due to increase in money supply;
3. Real money balances will not change;
4. Real wages will not change;
5. Interest rate will not change.

❖ Characteristics of the model

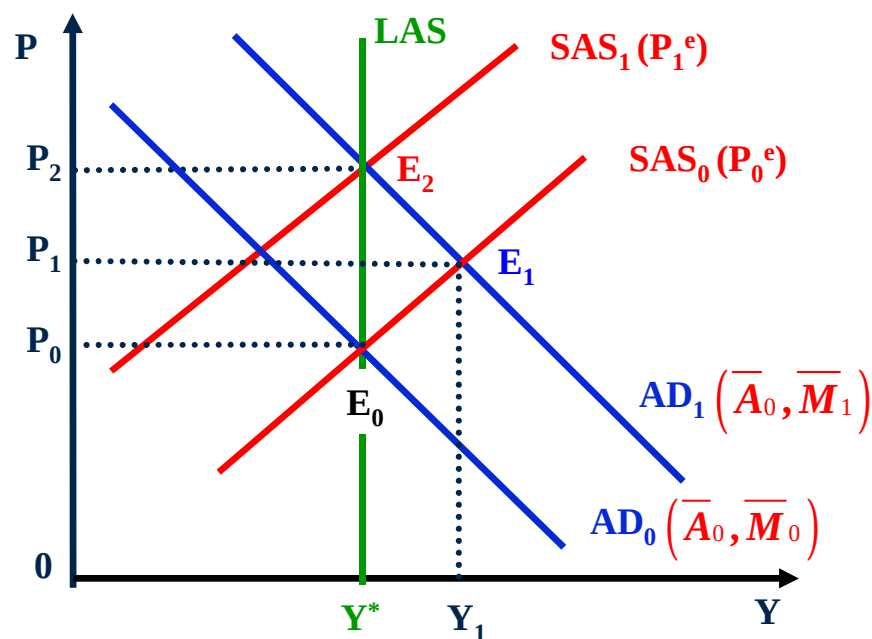
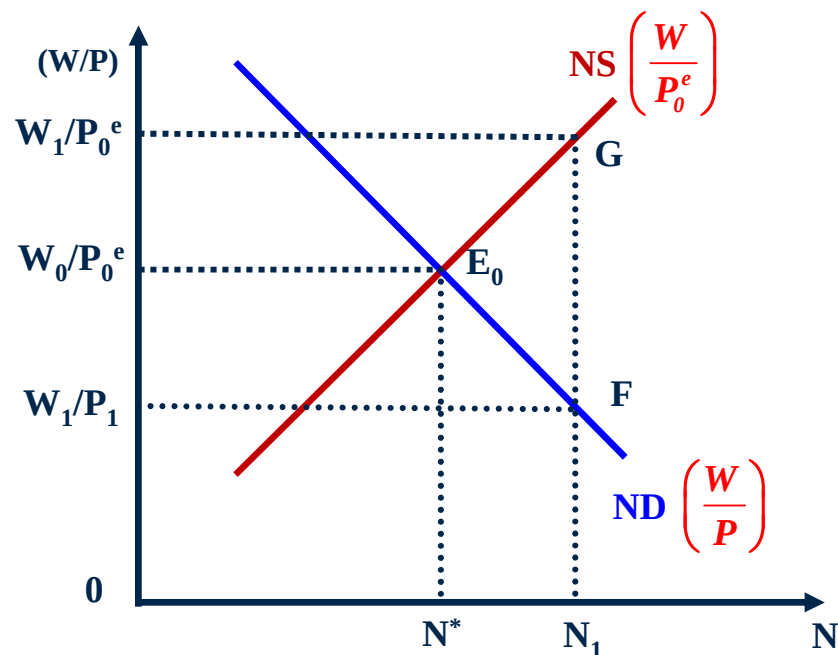
$$ND = ND(W/P, \dots)$$

$$NS = NS(W/P^e, \dots)$$

$$\frac{W}{P^e} = \frac{W}{P} \cdot \frac{P}{P^e}$$

$$NS = NS\left(\frac{W}{P} \cdot \frac{P}{P^e}\right)$$

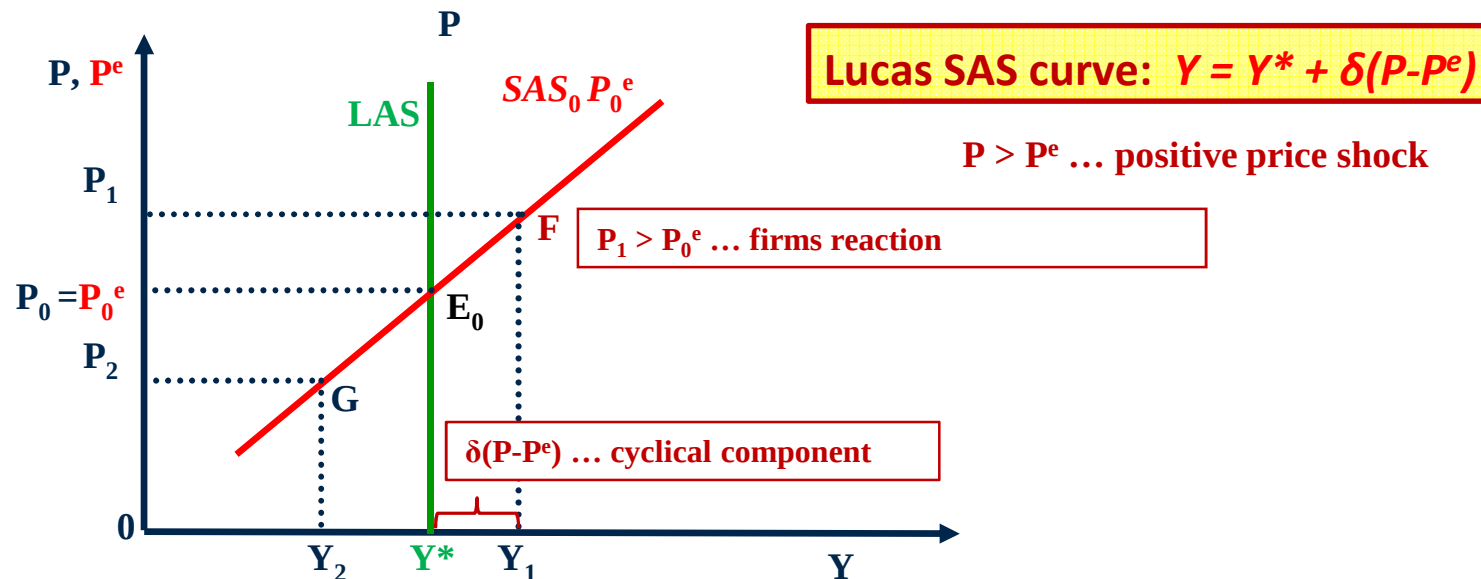
$$\text{SAS curve: } Y = Y^* + \delta(P - P^e)$$



b) Lucas SAS curve: imperfect information and rational expectation

Lucas supposed the same assumptions as Friedman, but his concept of SAS curve extends to the conclusion that the information barriers (imperfect information) exist on both, the workers and on the part of companies. As a result, the firms mistakenly confuse changes in the overall level of changes in relative prices of the goods produced by them.

All rationally conclude, but erroneously, that the relative price of goods they produce, has increased. In fact, there is increase in the aggregate price level, rather than the relative price of goods produced by firms. Thus, mistakenly thinking everyone, so everyone is working more hours and voluntarily produce more goods.

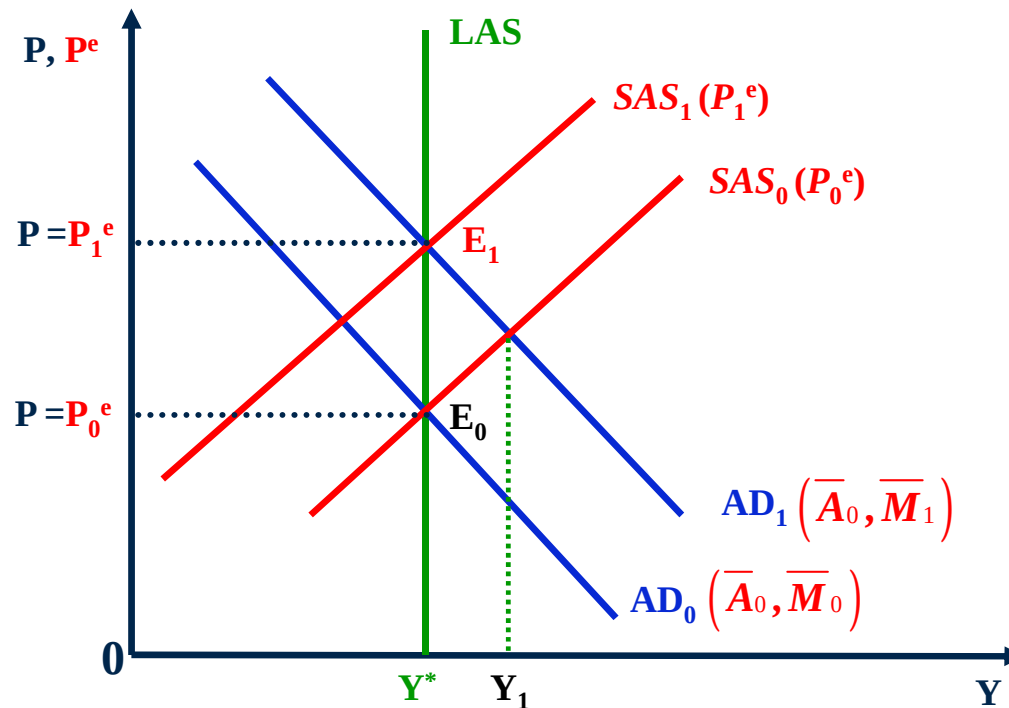


b) Lucas SAS curve:

imperfect information and rational expectation

❖ Anticipated change

$$\text{SAS curve: } Y = Y^* + \delta(P - P^e)$$



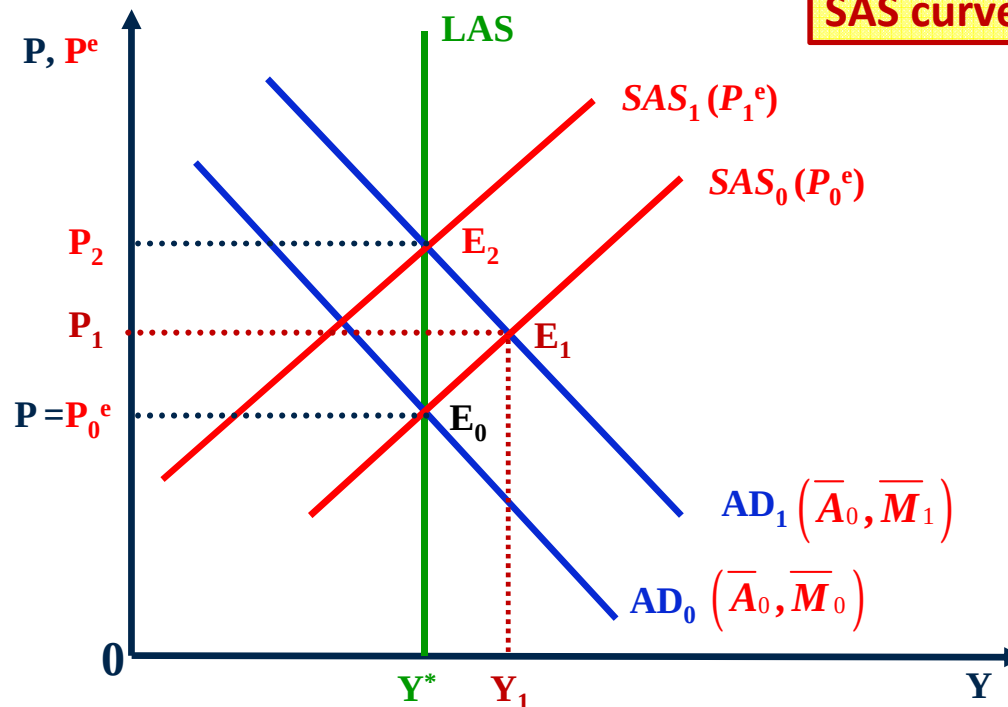
Anticipated changes in the money supply, respectively no changes have no effect on output and employment, but only at the price level, since all economic entities forming their expectations rationally. Anticipated monetary and fiscal policies are therefore ineffective.

b) Lucas SAS curve:

imperfect information and rational expectation

❖ Unexpected change

$$\text{SAS curve: } Y = Y^* + \delta(P - P^e)$$

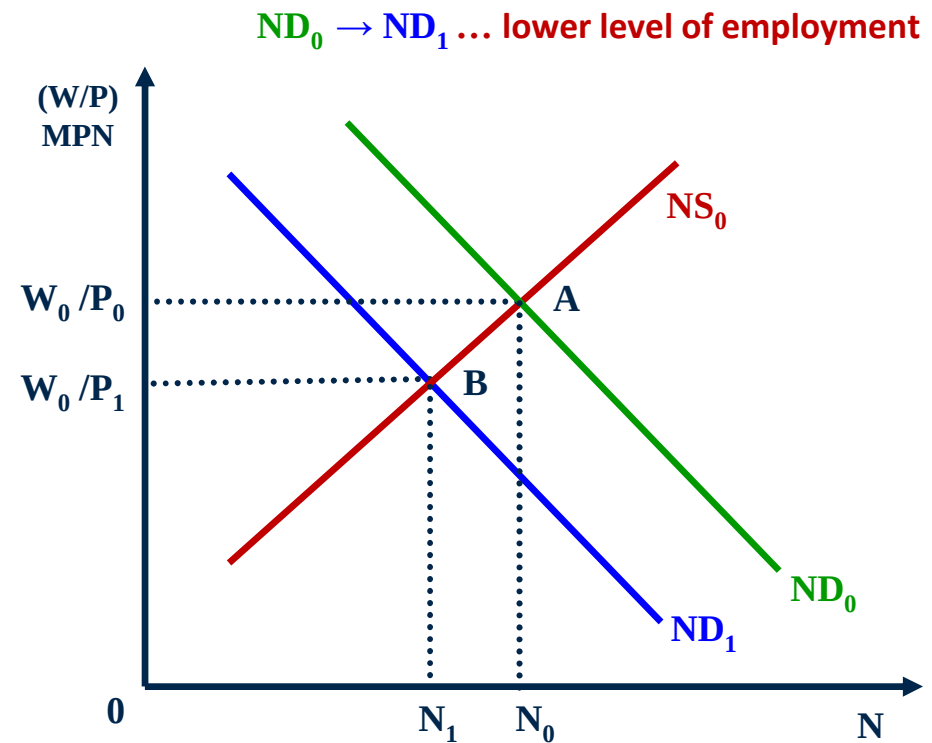
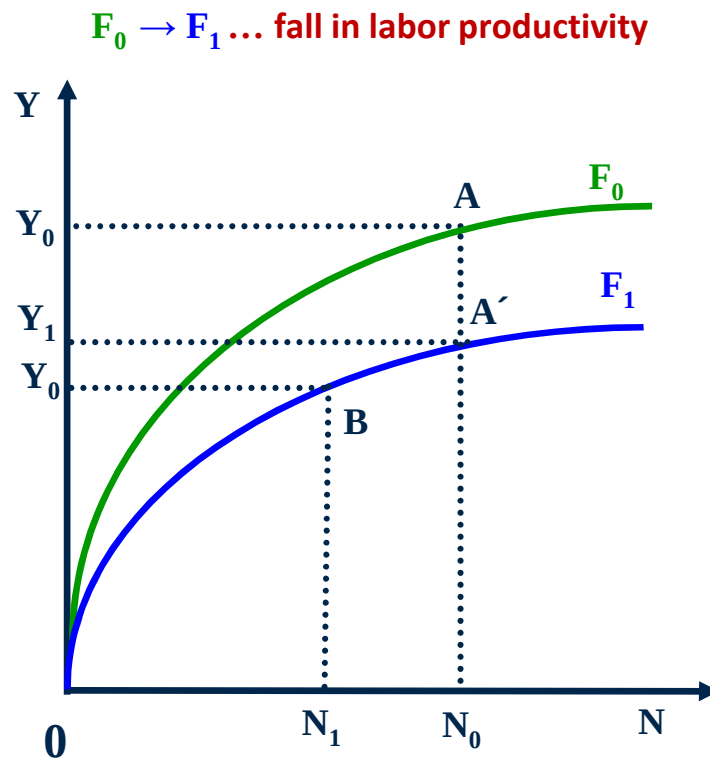


Unexpected change in the money supply has an impact on the real economy variables (output and employment), but these effects of monetary expansion (the actual price level is lower than expected) are only temporary, unemployment is only voluntary, and the economy will return to a long-term stable equilibrium point, i.e. to the potential product and the natural rate of unemployment.

The natural rate of the product and the natural rate of unemployment represent the center of gravity and thus the long-term equilibrium point.

c) The theory of real business cycle

❖ Negative supply shock and its impact on the output and employment

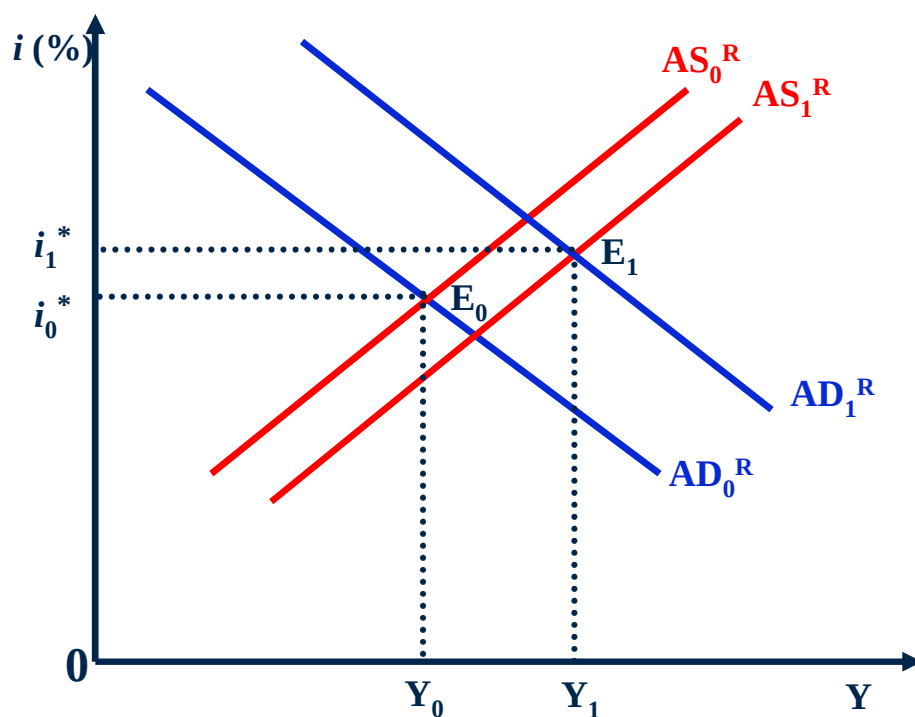


The concept of real business cycle underlines the particular type of substitution effect (i.e. the substitution of leisure time by the work time) - intertemporal substitution.

❖ Effects of positive supply shock

Assuming positive change (progress) in technology.

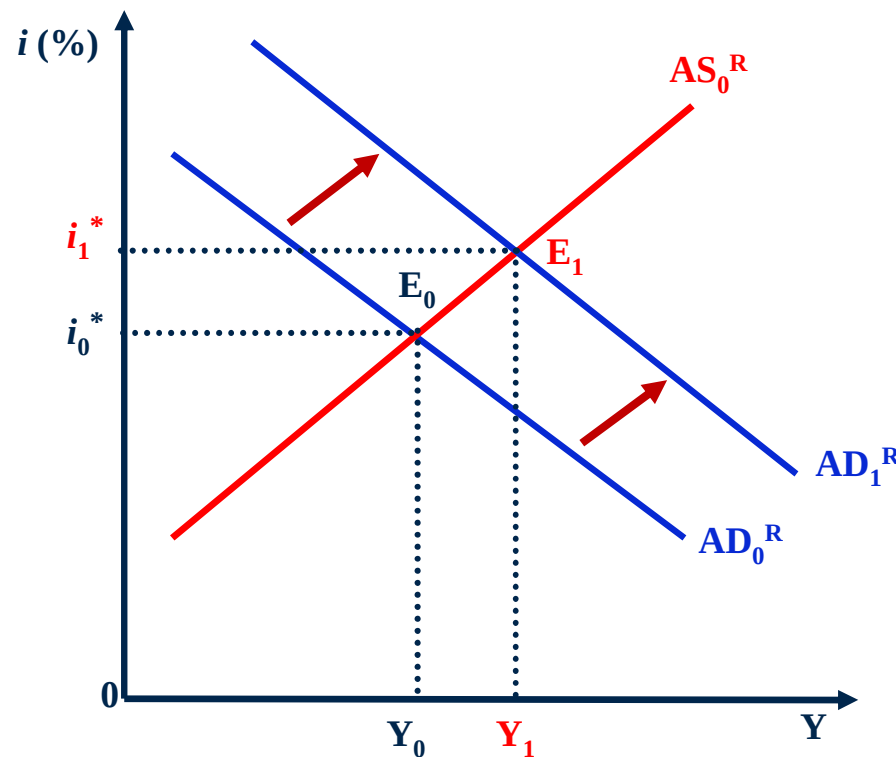
- Positive change in production function;
- AS shift: from AS_0^R towards AS_1^R ;
- AD shift: from AD_0^R towards AD_1^R ;
- Increase in interest rate from i_0^* to i_1^* ;



❖ Fiscal policy and money function in the Theory of real business cycle

➤ *Fiscal policy and the Theory of real business cycle*

- Fiscal expansion → a shift from AD_0^R towards AD_1^R → an increase from i_0^* to i_1^*
- Workers work more due to high interest rates.
- Production is increasing.

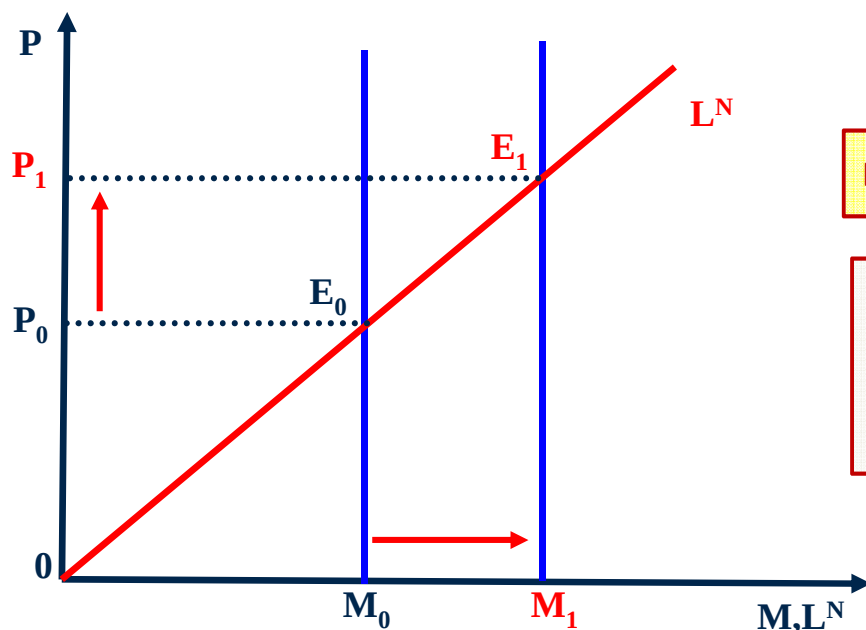


❖ Fiscal policy and money function in the Theory of real business cycle

➤ Money function in the Theory of real business cycle (constant L^N)

The basis of the concept of real business cycle is the classical assumption of flexible prices and wages and thus the assumption of cleaned market of production, bonds and money.

The starting assumption: equality of supply and demand for real money balances



$$M/P = L \quad \rightarrow \text{assuming } L = L(i, Y)$$

$$M/P = L(i, Y)$$

$$\rightarrow M = P \cdot L(i, Y)$$

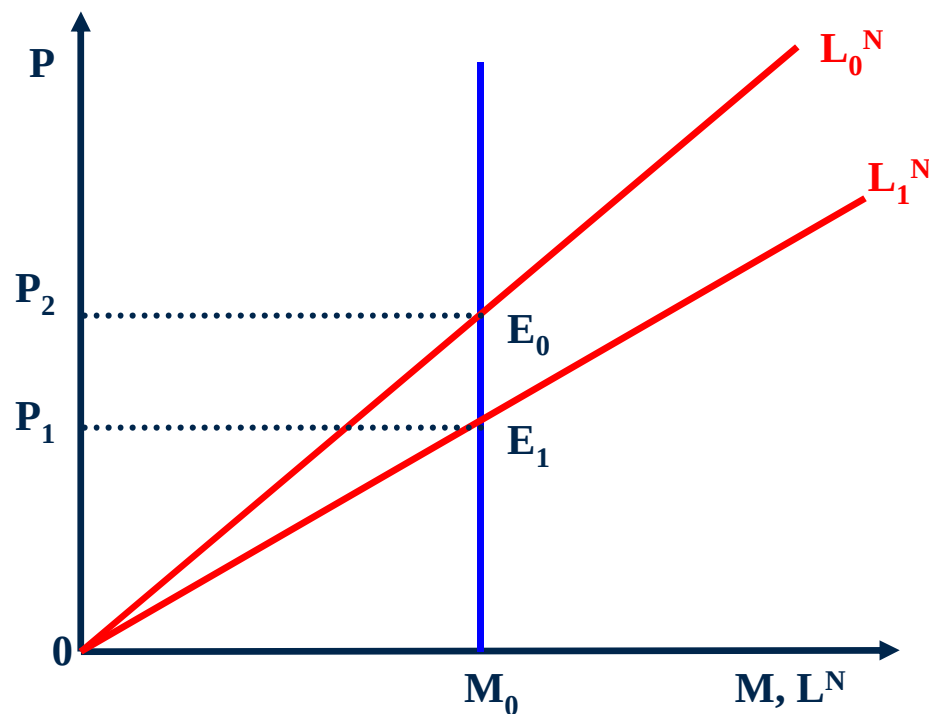
Demand for money does not change.

If the M increase from M_0 to M_1 assuming constant L^N , the price level will increase to P_1 and $M_0/P_0 = M_1/P_1$
 $\rightarrow$ the effect of households behavior or the effect of real money balances

❖ Fiscal policy and money function in the Theory of real business cycle

➤ Money function in the Theory of real business cycle (changing L^N)

Assuming positive change $\rightarrow$ increase in the output $\rightarrow$ increase in demand for money (L^N); money supply is constant.

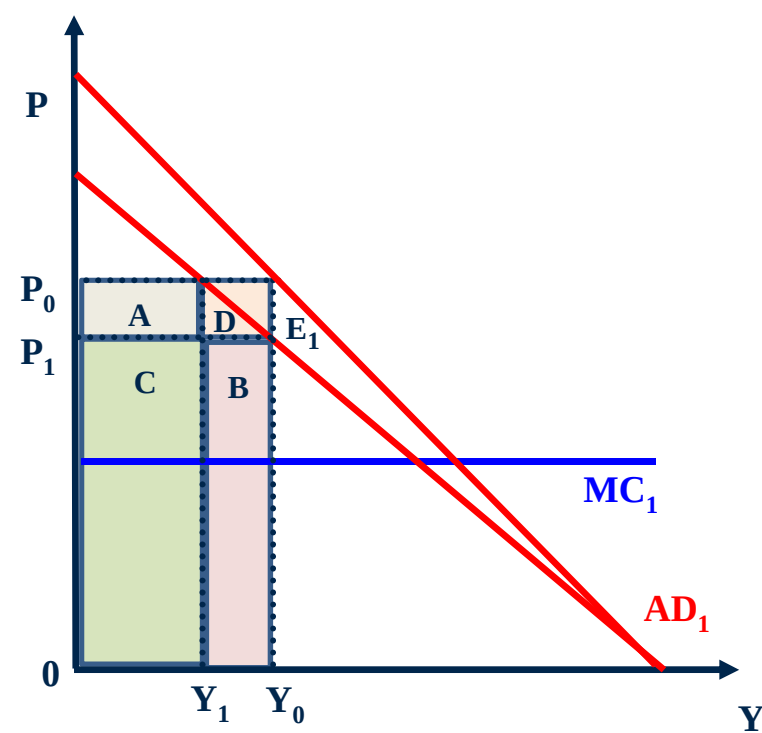
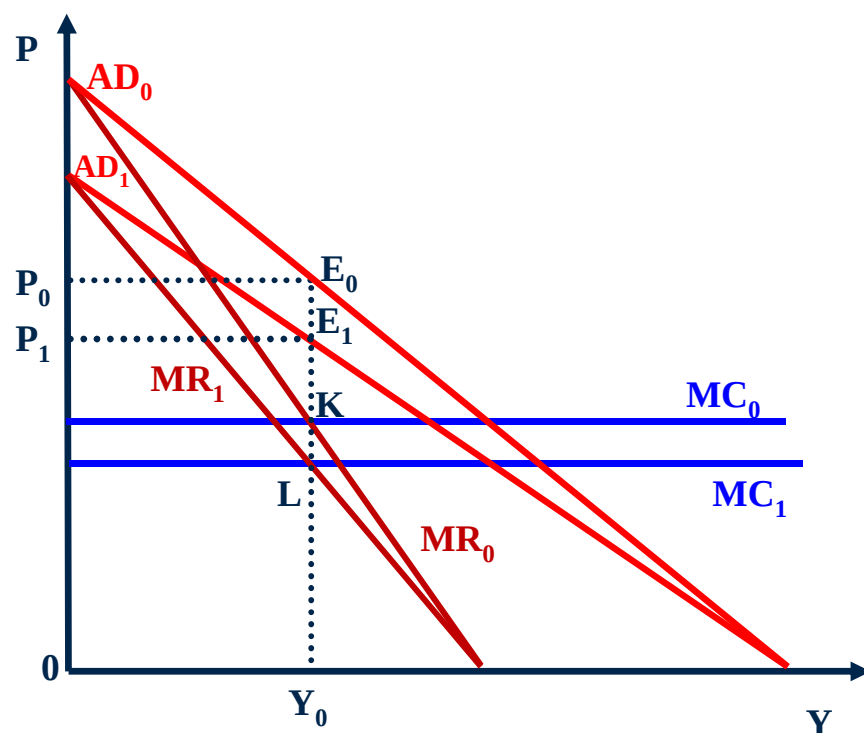


It results in fall in P .

❖ Menu costs, pricing in conditions of imperfect competition (monopoly) and macroeconomic demand externality

Lowering the price causes costs: various business costs associated with changes in prices = menu costs.

Consequence of a decision not to reduce the company's profit-maximizing price, even if AD dropped, which causes the loss of the economy as a whole, is called the demand macroeconomic externalities.



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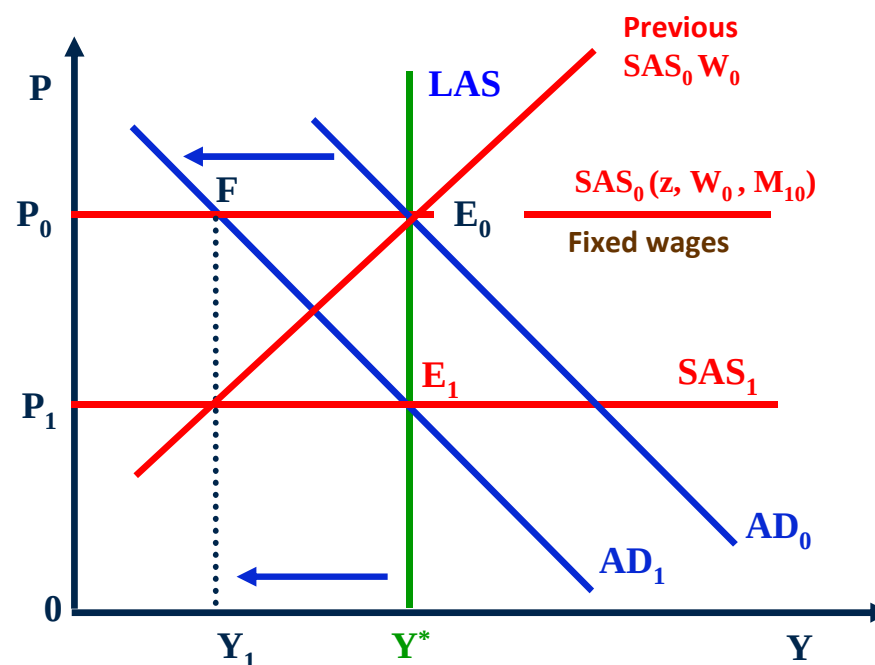
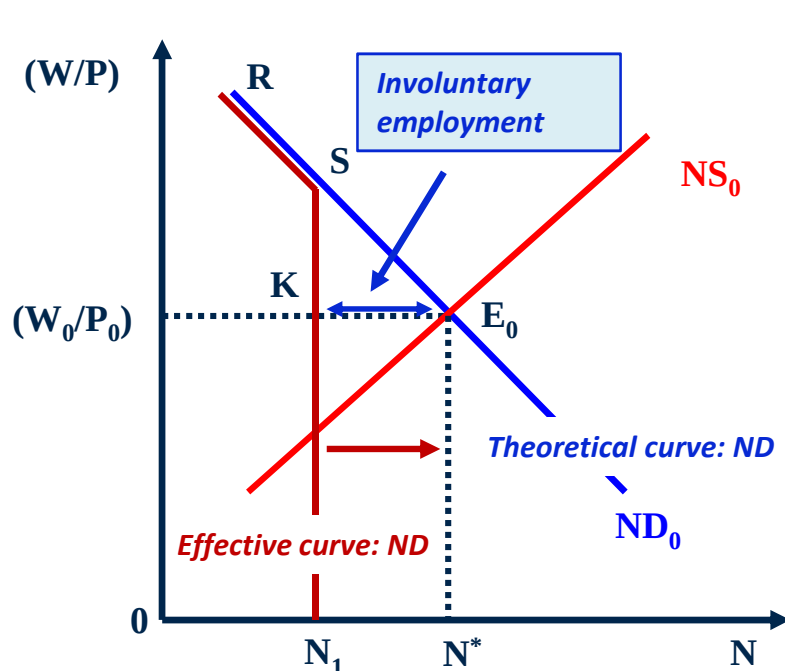
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❖ The model of business cycle and Keynesian macroeconomics

Sources of gradual adaptation of wages and prices (moving the economy from point E_2 to E_1):

- Changes in auction prices of goods (if they fall, and then also marginal cost will fall with some delay → gradual reduction of prices);*
- reduction in margin;*
- labor costs may not increase, but even they may reduce to some extent.*



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List of tasks for students

Exercise “**Aggregate demand and aggregate supply in the concept of new classical economics and new Keynesian economics**”

1. Derive and characterize the Keynesian short run aggregate supply curve (base situation).
2. Analyze the short and long term effects of fiscal policy on the assumption positively sloping aggregate supply curve in the short term.
3. Analyze the short and long term effects of monetary policy assuming positively sloping aggregate supply curve in the short term.
4. Characterize the basic assumptions of new classical macroeconomics and disassemble Friedman and Lucas model short run aggregate supply.
5. Explain the nature of the real business cycle theory.
6. Analyze starting microeconomic foundation inflexibility of wages and prices in the concept of the new Keynesian economics.



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